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GRADUATE STUDIES NEWS

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Graduate Studies in Educational Technology

by Phil Moscovitch

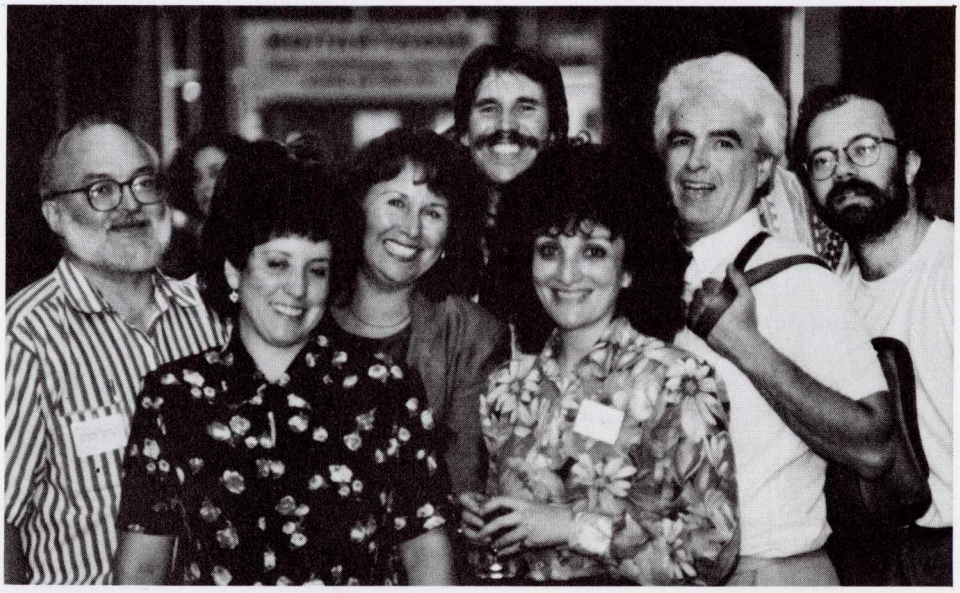
Concordia's Educational Technology programme was born in 1968, when the Education Department of Sir George Williams University (a predecessor of Concordia) began offering courses in conjunction with the University's Centre for Instructional Technology. Professor Gary Boyd was the fledgling programme's only full-time faculty member.

Ed Tech has come a long way since then. It is now the University's second largest graduate programme, with students engaged in both master's and doctoral studies.

Educational technologists generally apply theories and technical equipment developed outside the field of education to solve educational and training problems. Professor P. David Mitchell has said that "almost all questions about education or teaching can be boiled down to two categories: what ends do we think are worthwhile, and what are the best means to achieve those ends? Educational technology is all about the means."

Students do work in a number of areas, including training and human resource development, educational psychology, cybernetics, computer-aided learning, production and evaluation of educational media, and distance education. Students in the master's programme get hands-on training through internships in education as well as in the private sector.

Twenty-six years after its inception,



Ed Tech faculty and alumni: *(from left to right)* David Mitchell, Mariela Tovar, Caroline Bennett, Richard Schmid, Marielena Nuñez, Dennis Dicks and Steve Shaw.

Concordia's Educational Technology programme remains the only one of its kind in Canada — it is the only full-fledged course of study in ed tech offered at an English university in Canada. While some teacher-training programmes include an ed tech component, the Concordia programme takes a far broader approach. As a result, graduates go on to careers in government, the military, education, business, and academia.

The breadth of careers available to Concordia's Educational Technology graduates was apparent at the *Educational Technology: 26 Years* conference held at the University from July 3 to 6 this past summer. The event was attended by close to 150 alumni and currently registered students who came from across Canada, as well as from Europe

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and have a family and kids and a lot of responsibilities at work and home, but still you like to stretch yourself and acquire more skills and more information," he says.

He brings to his career as an educational technologist an almost missionary enthusiasm: "We've been on the vanguard of bringing the new technologies into universities — for instance, bringing editing suites, TV studios and video cameras into the teaching environment. We have to battle on."

When Betty Carswell enrolled in the master's programme in 1981, she was already working full-time teaching nursing at the CEGEP level. Although she was already an educator, Carswell chose an M.A. in Educational Technology in order to become a better teacher, and to broaden her horizons.

"One thing that came out of this place for me is a love of learning — to stretch yourself and aquire more skills and information."

"Instead of doing a master's in nursing, I thought I would broaden my base and do a master's in education. This seemed to be the best master's programme available in Montreal," she says. "Educational technology was new and it appealed to me. I like the creativity — the gaming and simulation and all the new computer things the programme provided that other programmes didn't."

Research in Test-Taking

Carswell, who teaches nursing at CEGEP John Abbott College, did research into test-taking — particularly in relation to multiple choice exams — for her thesis. It's a topic that, five years after her graduation, continues to interest her.

"The attitudinal data was just incredible," Carswell says of her thesis research. "I had no idea that students felt the way they did...I didn't realize before that anxiety played such a big role in their performance, and that sometimes our exams are not really very valid. Sometimes we tend to teach them one thing, and then to test another. That was a very interesting finding."

Her research, Carswell believes, has had a direct and very positive effect on her abilities as a teacher. For one thing, she now spends time showing students strategies to help improve their performance on standardized tests. This is in contrast to some of her colleagues who believe that it is entirely up to students to deal with tests.

At John Abbott, Carswell says, "we have a lot of students who have been deprived from an educational standpoint. We have a lot of students at risk, and they need help. They need just a few nudges in the right direction and they're fine, but you have to help them." She argues that this is especially true in fields like medicine, nursing, and dentistry because these days if you can't master multiple choice exams, then you're not going to get anywhere [in those fields]."

Applies Theories & Techniques Daily

Carswell says that she finds herself directly applying theories and techniques that she learned at Concordia, not only to her teaching, but to other aspects of her life as well, on a daily basis: "There's so much — I use it at work all the time. I always evaluate each class, or the clinical experience with students. I listen to what students say — and I didn't use to — and then I operationalize the info they give me." She learned, Carswell explains, "that teachers who don't allow feedback from students to affect their teaching will soon stop getting feedback from them at all."

Richards, Momtahan, Nuñez and Carswell all presented papers on their respective fields of expertise at the twenty-sixth anniversary conference. The conference provided a forum for former colleagues to reacquaint and exchange ideas on the impact of future technology in their diverse fields.

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and South America.

Graduate Studies News spoke to five alumni whose careers highlight the range of possibilities available to Ed Tech graduates, from running learning resource centres and training programmes to teaching and pursuing research.

Interactive Media

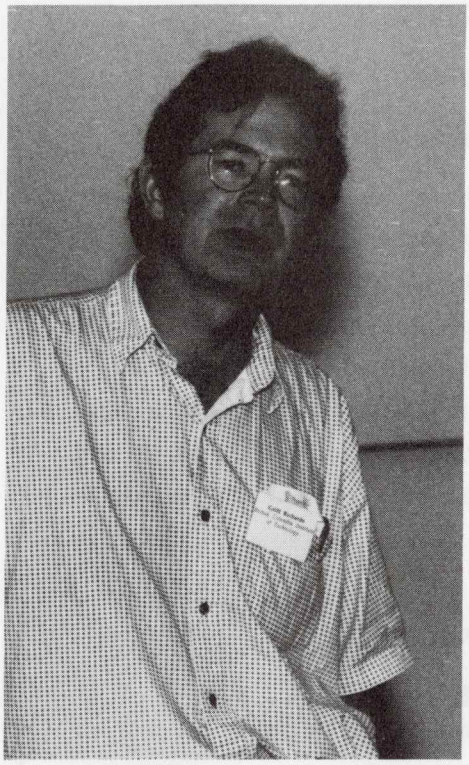
Griff Richards, who recently received his doctorate, has been a researcher at the British Columbia Institute of Technology for the past seven years. "Essentially I look after anything that involves interactive media," he says.

Richards believes strongly in the potential that virtual reality and 3-D technology have for improving education: "Education goes beyond telling people things. You have to create good experiences to make things stick. And that's where the interactivity comes in."

It's almost a cliché to say that people learn better by doing than by simply listening to a lecture. In many cases learning by doing just isn't possible, but, Richards points out, "now we have imaginative worlds where you can learn by interacting."

Some of the interactive videodisc projects he has been involved in developing at the B.C. Institute of Technology facilitate learning and testing through realistic simulations. Richards led the team that developed and produced the award-winning videodisc programme *The Anatomy and Physiology of the Heart*. Geared to medical and nursing students, the programme was the recipient of an Award of Excellence from the Association for Media and Technology in Education in Canada.

More recently, he has helped create an interactive programme to determine whether individuals with cognitive impairments should be allowed to keep their driving privileges. It is quite difficult, Richards explains, to assess the level of competency of those who have suffered head injuries or who have Alzheimer's disease. The programme, a driving simulation, would allow applicants with cognitive impairments to be pre-screened in order to determine whether they should proceed to an actual road test.



Griff Richards, a recent Ph.D. graduate

Richards' dissertation, which he defended earlier this year is "an attempt to get an idea of the cognitive processes associated with visualization in two dimensions and in three dimensions." He studied the ability of a group of drafting students to recognize two and three-dimensional projections of images that they had previously seen in the form of blueprints. Their rate of recall was higher for the 3-D images.

"It's a very subtle effect," Richards says, but "there is something in the three-dimensional image that makes it easier for virtual objects to be recognized and recalled."

Richards' doctoral research is connected with another project he has been helping a client work on: the development of 3-D imaging for a laparoscope. The laparoscope is a tiny surgical instrument which enters the body through the navel; it is used, for the most part, in surgery for gallstones.

Currently, Richards says, "doctors are working very much in a 2-D world," — in microsurgery they must manipulate their instruments with the help of a simple television screen. "By giving them three dimensions we can cut down on fatigue, and increase speed."

In addition to his master's in Ed Tech (which he also did at Concordia) Richards holds a degree in genetics and chemistry as well as one in education. He was first attracted to doing graduate work in educational technology during a year he spent studying computers at University of Ottawa.

The first computer program he wrote, he recalls, was full of mistakes, and the computer provided him with a list of improvements he could make to it. "I think it produced fourteen pages of corrections," he says. "I could see then that there was an opportunity to use computers in education to give corrective feedback."

Mix of Theory & Practice

When **Marielena Nuñez**, a native of Venezuela, was considering studying educational technology, Concordia wasn't her first choice. But soon after entering Concordia's master's programme in Ed Tech, she realized that it should have been.

In the mid-seventies the Venezuelan economy was booming thanks to high oil prices. The government set up a number of scholarship programmes to send students to foreign universities. Nuñez had hoped to study educational technology at a leading university in the States. But she was told that she wasn't eligible for a scholarship to the US and would have to come to Canada.

Nuñez came to Montreal and audited a course given by Professor P. David Mitchell — and loved it.

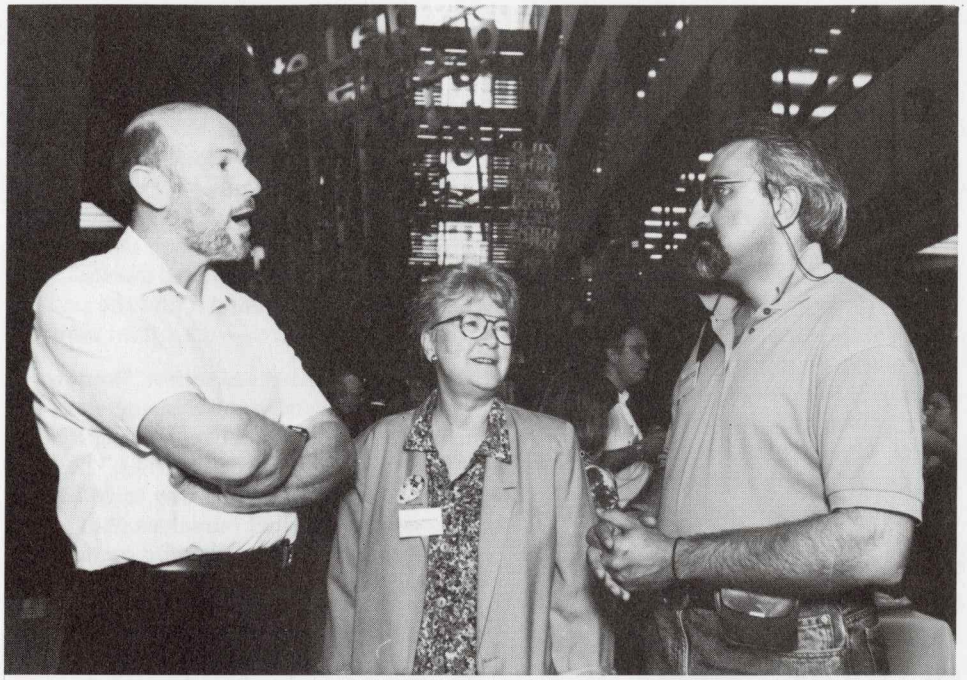
When Nuñez returned to Venezuela, she realized she had chosen well. "I had an expertise they didn't have," she says. Nuñez found that not only did she have a strong theoretical background, but, thanks to some of her courses and to an internship at Vanier College, she had hands-on experience as well.

Once she got back to Venezuela, Nuñez says, she found that her degree "opened

the doors of success for me." She did training for the military for five years, then worked for a consulting firm. Today, Nuñez is Functional Manager for Research and Development at the Centro de Formación y Adiestramiento de Petroleos de Venezuela y sus Filiales (CEPET). It's the human resources and training arm of Petrolio de Venezuela Sociedad Anonyma, the Venezuelan national petroleum company. With forty thousand employees, it is the world's third largest oil company.

At CEPET, Nuñez designs and evaluates training programmes. These range from courses in self-improvement, English language instruction, and the use of new technologies, to training workers in the extraction, processing, and marketing of petroleum. CEPET's training programmes are designed for workers, managers, supervisors, and executives.

"We also serve the community," Nuñez explains. "Let's suppose a local government needs help on leadership — they may come to us for help. We prepare courses for them to help the community develop leaders."



Ed Tech alumni: *(from left to right)* Arthur Shears, Betty Carsell and Hamid Momtahan.

Pioneering Computer-assisted Instruction

In the years since Nuñez studied at Concordia, in the late seventies, new computer technology has radically changed educational technology. "When we started with computer-assisted instruction, I was punching cards...Things have changed a lot since then. I think of myself as a pioneer — in my country at least."

Despite the technological changes, Nuñez has found that her theoretical training has served her in good stead. "The things that I learned at Concordia are still very alive to me," she says.

International Career Opportunities

Arthur Shears also works in the business sector, running Shear.Com.Services, his training and human resource development firm. But before starting up the business and settling down in his native Halifax in 1988, he spent seven years working in development and other programmes overseas.

Shears was offered his first job in ed tech in 1975 — before he had even completed the master's programme. He was hired to manage a development project run by CUSO in Ghana. After spending two years in western Africa he returned to Canada and completed the thesis (an analysis of television production variables) which he had left unfinished.

Then, in 1981, he was hired to help set up a management training centre for agriculture and rural development in Nigeria. The job was an educational technologist's dream. It gave Shears, as Senior Advisor in Learning Resources and Assistant Director of the institute, an opportunity to participate in building a training facility from scratch.

At Concordia, Shears had completed a concentration in educational media. Now he had an opportunity to put his education to work directly. "I helped them plan and set up the audiovisual production facility. That was a production facility for audio, graphics, printing, the whole thing. In addition, I was responsible for setting up the library — the whole area that was encompassed under learning resources," he says. "In terms of facilities planning it was an exceptional opportunity for me."

A similar job, this time in Saudi Arabia with the UN's International Telecommunications Union, followed. Once again, he was involved in the development of learning resources, and in training locals to improve their skills as instructors. But when he tried convincing people of the merits of independent study, he ran into some cultural problems.

"I set up a learning resource centre to promote the concept of individualized, independent study, which, in the Saudi context, wasn't all that successful, frankly," he recalls. "They're a very sociable people and the idea of working independently is in some ways foreign — they prefer working in groups."

Shears said that while the learning resource centre didn't wind up being used for the purpose he had originally envisioned, it was, nevertheless, something of a success. Instructors wound up incorporating some of the centre's audiovisual materials into their classroom teaching.

Distance Education

Shears' company is in the business of designing and evaluating training materials and programmes. "We're the only company in the Maritimes who do that," he says. The firm has focussed

particularly on promoting the concept of distance education. He has converted face-to-face training programmes into distance ones for a number of companies, and he is Dalhousie University's distance education consultant.

Many faculty, Shears says, are hostile to the idea of distance education; but he believes that hostility is misplaced. Offering distance courses doesn't cut down on the number of students attending university, it simply makes courses accessible to more people. "What you're doing is bringing your education out to people who couldn't ordinarily come. And to me, this is what education should be all about; not being restricted to the classroom, not being restricted by university walls and making it available to whoever wants it."

"It's not a panacea," Shears adds, "but as a way to bring education to people who can't come to the institution it's fantastic."

Shears was recently back at Concordia, teaching a course on developing multimedia course materials for distance education.

Designing Learning Resource Centres

Like Shears, Hamid Momtahan has also had the opportunity to plan a learning centre from the ground up — literally. Momtahan is head of Media Services at Thames Valley University in England. He's also a member of the team designing the university's learning resource centres.

A brand new university (it's only two years old), Thames Valley is the result of the merger of four institutions. Its learning resource centres bring under one roof the university's media and computer services as well as the library.

"As you can imagine, there are a lot of different cultures involved with how we operate, and how the librarians and computer people operate. So there's a lot of ironing out to be done in order to get the Centre in one structure, and run by one management," he says.

Thames Valley requires two learning resource centres, because it has campuses that are twenty miles apart. The first centre was completed in October of 1993, and the second is due to be completed this October.

Momtahan explains that the "development team has worked very closely with the architect, and has taken into consideration the people who are going to use the centre. Part of our development team are students, actually, who are designing the centre with us. The professionals, the architect, the students who will be using it and the people who work there — it's a joint effort."

Once both centres are set up, Momtahan plans to work on increasing electronic connections between campuses. "Although we have the Internet," he says, "there's still a long way to go before we can connect ourselves with, say, video-conferencing and audio-conferencing.

As head of Media Services, Momtahan oversees an operation which produces educational materials, runs workshops and training courses for both students and staff, and teaches classes on what he calls "lens-based media." These include courses on TV production, photography, and script-writing.

Skills acquired have served well

Prior to his current position, Momtahan, who graduated from Concordia's master's programme in 1977, ran a "facility house" including a television production studio and a sound studio at London's College of Further Education. "We used to make television programmes as well as do a lot of games and simulations. And we started running courses in television production there," he says. He also spent eight years teaching TV production and producing television programmes.

Even though Momtahan's career has taken a number of twists, the skills he acquired at Concordia have been useful to him throughout. He has used his production skills in television production, of course, but Momtahan also points to a theoretical course in cybernetics whose content he says he continually refers to.

Momtahan is now considering doing a doctorate in educational technology. "One thing that came out of this place for me is a love of learning, and the fact that it doesn't matter — you may be 45

'Offering distance courses doesn't cut down on the number of students attending university, it simply makes courses accessible to more people. What you're doing is bringing your education out to people who couldn't ordinarily come.'

1994 Prix d'excellence Winner

Dr. Guy Cormier, Dept. of Chemistry & Biochemistry

The School of Graduate Studies is proud to announce the winners of the 1994 prestigeous Prix d'excellence, awarded by the Chambre de Commerce, for the best Ph.D. thesis in Natural Science and Engineering, Humanities, and Health Science, written by a student at Concordia, McGill, Université de Montréal, Université du Québec à Montréal, École des Hautes Études Commerciales, or l'École Polytechnique. The winners, who are chosen by a jury which includes the Deans of Graduate Studies of the four Montreal universities, become members of the distinguished group of grands montréalais. Chosen from 68 nominees, the three winners are:

Social Sciences:

Ms. Dominique Ryan
Anthropology
Université de Montréal

Health Sciences:

Mr. Marc Therrien
Bio-chemistry
Université de Montréal

Natural Sciences & Engineering:

Mr. Guy Cormier
Chemistry and Bio-chemistry
Concordia University

His supervisor, Dr. John Capobianco, says of his former student, "Guy is certainly one of the brightest, most creative, enthusiastic young scientists that I've met in my career. He has capabilities in an extraordinary broad range of pursuits and interests that range from physics and chemistry to music." Guy Cormier's thesis, entitled "Molecular Dynamics Simulation and Crystal-Field Theory: Predicting the Optical Spectra of Rare-Earth Doped Inorganic Glasses" was accepted as submitted.

INTERDISCIPLINARY SPEAKER SERIES

The School of Graduate Studies will be hosting an Interdisciplinary Speaker Series during the 1994-95 academic year. The series will begin with the following lectures:

in collaboration with the Department of Communication Studies

Speaker:
James W. Carey of Columbia University

Title:
Harold Innis and the Ecology of 20th Century Communications

Thursday, October 13, 1994, 8:00 p.m.
H-110 Hall Building, 1455 de Maisonneuve W.

in collaboration with the Faculty of Arts and Science and the Faculty of Commerce and Administration

Speaker:
James A. Anderson of North Carolina State University

Title:
Issues of Diversity

Thursday, October 20, 1994, 1:00 - 2:30 p.m.
Cinema de Sève in the McConnell Building, 1400 de Maisonneuve W.

All members of the university community are welcome to attend. For further information, contact **Dr. Dorothy Markiewicz, Associate Dean, School of Graduate Studies, 848-3894.**

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